

## Radial Lead Type

Series : **FR** Type : **A**



### Features

- Low ESR (Same as FM Series)
- Endurance : 105 °C 5000 h to 10000 h
- RoHS compliant

### Country of origin

- Malaysia

### Attention

- Not applicable for automotive

### Specifications

|   |  |   |      |      |      |      |      |      |      |                 |
|---|--|---|------|------|------|------|------|------|------|-----------------|
| Category temperature range                            | -40 °C to +105 °C  |   |      |      |      |      |      |      |      |                 |
| Rated voltage range                                   | 6.3 V.DC to 100 V.DC   |   |      |      |      |      |      |      |      |                 |
| Capacitance range                                     | 4.7 µF to 8200 µF  |   |      |      |      |      |      |      |      |                 |
| Capacitance tolerance                                 | ±20 % (120 Hz/+20 °C)  |   |      |      |      |      |      |      |      |                 |
| Leakage current                                       | I ≤ 0.01 CV (µA) After 2 minutes   |   |      |      |      |      |      |      |      |                 |
| Dissipation factor (tan δ)                            | V.DC   | 6.3   | 10   | 16   | 25   | 35   | 50   | 63   | 100  | (120 Hz/+20 °C) |
|   | tan δ  | 0.22  | 0.19 | 0.16 | 0.14 | 0.12 | 0.10 | 0.09 | 0.08 |                 |
| Add 0.02 per 1000 µF for products of 1000 µF or more. |  |   |      |      |      |      |      |      |      |                 |
| Endurance   | After following life test with DC voltage and +105 °C±2 °C ripple current value applied. (The sum of DC and ripple peak voltage shall not exceed the rated working voltage) when the capacitors are restored to 20 °C, the capacitors shall meet the limits specified below. |   |      |      |      |      |      |      |      |                 |
|   | Duration   |   |      |      |      |      |      |      |      |                 |
|   | φ5×11/ φ6.3×11.2 : 5000 hours<br>φ8×11.5/ φ10×12.5 : 6000 hours (* Only EEUFR1V331U (φ10×12.5) 5000 hours)<br>φ8×15/ φ10×16 : 8000 hours, φ8×20 : 9000 hours<br>φ10×20 to φ10×25/ φ12.5×20 to φ12.5×35/ φ16×20 to φ16×25 : 10000 hours                                       |   |      |      |      |      |      |      |      |                 |
|   | Capacitance change   | Within ±25 % of the initial value (6.3 V.DC to 10 V.DC : ±30 %) |      |      |      |      |      |      |      |                 |
|   | tan δ  | ≤ 200 % of the initial limit                                    |      |      |      |      |      |      |      |                 |
|   | DC leakage current   | Within the initial limit  |      |      |      |      |      |      |      |                 |
| Shelf life  | After storage for 1000 hours at +105 °C±2 °C with no voltage applied and then being stabilized at +20 °C, capacitors shall meet the limits specified in Endurance. (With voltage treatment)  |   |      |      |      |      |      |      |      |                 |

### Frequency correction factor for ripple current

| Rated voltage (V.DC) | Capacitance (µF) | Frequency (Hz) |      |      |      |       |
|----------------------|------------------|----------------|------|------|------|-------|
|                      |                  | 60             | 120  | 1 k  | 10 k | 100 k |
| 6.3 to 100           | 4.7 to 33        | 0.45           | 0.55 | 0.75 | 0.90 | 1.00  |
|                      | 47 to 330        | 0.60           | 0.70 | 0.85 | 0.95 | 1.00  |
|                      | 390 to 1000      | 0.65           | 0.75 | 0.90 | 0.98 | 1.00  |
|                      | 1200 to 8200     | 0.75           | 0.80 | 0.95 | 1.00 | 1.00  |

### Dimensions

(Unit : mm)

| φD | 5   | 6.3 | 8   | 10  | 12.5       |          | 16  |
|----|-----|-----|-----|-----|------------|----------|-----|
| L  | —   | —   | —   | —   | 12.5 to 25 | 30 to 35 | —   |
| φd | 0.5 | 0.5 | 0.6 | 0.6 | 0.6        | 0.8      | 0.8 |
| F  | 2.0 | 2.5 | 3.5 | 5.0 | 5.0        |          | 7.5 |

## Case size/ Impedance/ Ripple current

| Rated voltage<br>(V.DC)            | 6.3 V.DC to 35 V.DC               |        |                                       | 50 V.DC                           |        |                                       |
|------------------------------------|-----------------------------------|--------|---------------------------------------|-----------------------------------|--------|---------------------------------------|
|                                    | Impedance<br>( $\Omega$ /100 kHz) |        | Ripple current<br>(mA r.m.s./100 kHz) | Impedance<br>( $\Omega$ /100 kHz) |        | Ripple current<br>(mA r.m.s./100 kHz) |
|                                    | +20 °C                            | -10 °C | +105 °C                               | +20 °C                            | -10 °C | +105 °C                               |
| Case size<br>(mm)<br>( $\phi$ D×L) |                                   |        |                                       |                                   |        |                                       |
| 5 × 11                             | 0.300                             | 1.000  | 280                                   | 0.340                             | 1.130  | 250                                   |
| 6.3 × 11.2                         | 0.130                             | 0.430  | 455                                   | 0.140                             | 0.460  | 405                                   |
| 8 × 11.5                           | 0.056                             | 0.168  | 950                                   | 0.061                             | 0.183  | 870                                   |
| 8 × 15                             | 0.041                             | 0.123  | 1240                                  | 0.045                             | 0.135  | 1140                                  |
| 8 × 20                             | 0.030                             | 0.090  | 1560                                  | 0.033                             | 0.099  | 1430                                  |
| 10 × 12.5                          | 0.043                             | 0.114  | 1290                                  | 0.042                             | 0.126  | 1170                                  |
| 10 × 16                            | 0.028                             | 0.078  | 1790                                  | 0.030                             | 0.090  | 1650                                  |
| 10 × 20                            | 0.020                             | 0.057  | 2180                                  | 0.023                             | 0.069  | 1890                                  |
| 10 × 25                            | 0.018                             | 0.054  | 2470                                  | 0.022                             | 0.066  | 2150                                  |
| 12.5 × 20                          | 0.018                             | 0.045  | 2600                                  | 0.022                             | 0.055  | 2260                                  |
| 12.5 × 25                          | 0.015                             | 0.038  | 3190                                  | 0.018                             | 0.045  | 2660                                  |
| 12.5 × 30                          | 0.013                             | 0.033  | 3630                                  | 0.016                             | 0.040  | 3160                                  |
| 12.5 × 35                          | 0.012                             | 0.030  | 3750                                  | 0.014                             | 0.035  | 3270                                  |
| 16 × 20                            | 0.017                             | 0.043  | 3300                                  | 0.019                             | 0.048  | 2870                                  |
| 16 × 25                            | 0.014                             | 0.035  | 3820                                  | 0.016                             | 0.040  | 3320                                  |

| Rated voltage<br>(V.DC)            | 63 V.DC                           |        |                                       |
|------------------------------------|-----------------------------------|--------|---------------------------------------|
|                                    | Impedance<br>( $\Omega$ /100 kHz) |        | Ripple current<br>(mA r.m.s./100 kHz) |
|                                    | +20 °C                            | -10 °C | +105 °C                               |
| Case size<br>(mm)<br>( $\phi$ D×L) |                                   |        |                                       |
| 5 × 11                             | 0.510                             | 2.040  | 175                                   |
| 6.3 × 11.2                         | 0.210                             | 0.840  | 284                                   |
| 8 × 11.5                           | 0.092                             | 0.368  | 566                                   |
| 8 × 15                             | 0.068                             | 0.272  | 741                                   |
| 8 × 20                             | 0.050                             | 0.200  | 930                                   |
| 10 × 12.5                          | 0.063                             | 0.252  | 761                                   |
| 10 × 16                            | 0.045                             | 0.180  | 1073                                  |
| 10 × 20                            | 0.035                             | 0.140  | 1229                                  |
| 10 × 25                            | 0.033                             | 0.132  | 1500                                  |
| 12.5 × 20                          | 0.033                             | 0.125  | 1582                                  |
| 12.5 × 25                          | 0.027                             | 0.092  | 1995                                  |
| 12.5 × 30                          | 0.024                             | 0.082  | 2528                                  |
| 12.5 × 35                          | 0.021                             | 0.071  | 2780                                  |
| 16 × 20                            | 0.029                             | 0.093  | 2153                                  |
| 16 × 25                            | 0.024                             | 0.074  | 2988                                  |

| Rated voltage<br>(V.DC)            | 100 V.DC                          |        |                                       |
|------------------------------------|-----------------------------------|--------|---------------------------------------|
|                                    | Impedance<br>( $\Omega$ /100 kHz) |        | Ripple current<br>(mA r.m.s./100 kHz) |
|                                    | +20 °C                            | -10 °C | +105 °C                               |
| Case size<br>(mm)<br>( $\phi$ D×L) |                                   |        |                                       |
| 10 × 20                            | 0.084                             | 0.336  | 1500                                  |

## Characteristics list

| Rated voltage (V.DC) | Cap. (±20 %) (μF) | Case size (mm) |      | Specification                                  |                                  |                   | Lead length (mm) |            |           | Part No. | Min. Packaging Q'ty  |               |           |
|----------------------|-------------------|----------------|------|--|----------------------------------|-------------------|------------------|------------|-----------|----------|----------------------|---------------|-----------|
|                      |                   | φD             | L    | Ripple current (100 kHz) (+105 °C) (mA r.m.s.) | Impedance (100 kHz) (+20 °C) (Ω) | Endurance (hours) | Lead dia. φd     | Lead space |           |          | Straight leads (pcs) | Taping (pcs)  |           |
|                      |                   |                |      |  |                                  |                   |                  | Straight   | Taping *B |          |                      |               | Taping *H |
| 6.3                  | 150               | 5              | 11   | 280  | 0.300                            | 5000              | 0.5              | 2.0        | 5.0       | 2.5      | EEUFR0J151( )        | 200           | 2000      |
|                      | 220               | 6.3            | 11.2 | 455  | 0.130                            | 5000              | 0.5              | 2.5        | 5.0       | 2.5      | EEUFR0J221( )        | 200           | 2000      |
|                      | 330               | 6.3            | 11.2 | 455  | 0.130                            | 5000              | 0.5              | 2.5        | 5.0       | 2.5      | EEUFR0J331( )        | 200           | 2000      |
|                      | 470               | 6.3            | 11.2 | 455  | 0.130                            | 5000              | 0.5              | 2.5        | 5.0       | 2.5      | EEUFR0J471( )        | 200           | 2000      |
|                      | 820               | 8              | 11.5 | 950  | 0.056                            | 6000              | 0.6              | 3.5        | 5.0       |          | EEUFR0J821( )        | 200           | 1000      |
|                      | 1000              | 8              | 11.5 | 950  | 0.056                            | 6000              | 0.6              | 3.5        | 5.0       |          | EEUFR0J102( )        | 200           | 1000      |
|                      | 1200              | 8              | 15   | 1240   | 0.041                            | 8000              | 0.6              | 3.5        | 5.0       |          | EEUFR0J122L( )       | 200           | 1000      |
|                      |                   | 10             | 12.5 | 1290   | 0.043                            | 6000              | 0.6              | 5.0        | 5.0       |          | EEUFR0J122( )        | 200           | 500       |
|                      | 1500              | 8              | 20   | 1560   | 0.030                            | 9000              | 0.6              | 3.5        | 5.0       |          | EEUFR0J152L( )       | 200           | 1000      |
|                      | 1800              | 10             | 16   | 1790   | 0.028                            | 8000              | 0.6              | 5.0        | 5.0       |          | EEUFR0J182( )        | 200           | 500       |
|                      | 2200              | 10             | 20   | 2180   | 0.020                            | 10000             | 0.6              | 5.0        | 5.0       |          | EEUFR0J222( )        | 200           | 500       |
|                      | 2700              | 10             | 25   | 2470   | 0.018                            | 10000             | 0.6              | 5.0        | 5.0       |          | EEUFR0J272L( )       | 200           | 500       |
|                      | 3300              | 10             | 25   | 2470   | 0.018                            | 10000             | 0.6              | 5.0        | 5.0       |          | EEUFR0J332L( )       | 200           | 500       |
|                      | 3900              | 12.5           | 20   | 2600   | 0.018                            | 10000             | 0.6              | 5.0        | 5.0       |          | EEUFR0J392( )        | 200           | 500       |
|                      | 4700              | 12.5           | 25   | 3190   | 0.015                            | 10000             | 0.6              | 5.0        | 5.0       |          | EEUFR0J472( )        | 200           | 500       |
|                      | 5600              | 12.5           | 30   | 3630   | 0.013                            | 10000             | 0.8              | 5.0        |           |          | EEUFR0J562L          | 100           |           |
|                      | 6800              | 12.5           | 35   | 3750   | 0.012                            | 10000             | 0.8              | 5.0        |           |          | EEUFR0J682L          | 100           |           |
|                      |                   | 16             | 20   | 3300   | 0.017                            | 10000             | 0.8              | 7.5        | 7.5       |          | EEUFR0J682S( )       | 100           | 250       |
|                      | 8200              | 16             | 25   | 3820   | 0.014                            | 10000             | 0.8              | 7.5        | 7.5       |          | EEUFR0J822( )        | 100           | 250       |
|                      | 10                | 100            | 5    | 11   | 280                              | 0.300             | 5000             | 0.5        | 2.0       | 5.0      | 2.5                  | EEUFR1A101( ) | 200       |
| 150                  |                   | 5              | 11   | 280  | 0.300                            | 5000              | 0.5              | 2.0        | 5.0       | 2.5      | EEUFR1A151( )        | 200           | 2000      |
| 220                  |                   | 6.3            | 11.2 | 455  | 0.130                            | 5000              | 0.5              | 2.5        | 5.0       | 2.5      | EEUFR1A221( )        | 200           | 2000      |
| 270                  |                   | 6.3            | 11.2 | 455  | 0.130                            | 5000              | 0.5              | 2.5        | 5.0       | 2.5      | EEUFR1A271( )        | 200           | 2000      |
| 470                  |                   | 8              | 11.5 | 950  | 0.056                            | 6000              | 0.6              | 3.5        | 5.0       |          | EEUFR1A471( )        | 200           | 1000      |
| 680                  |                   | 8              | 11.5 | 950  | 0.056                            | 6000              | 0.6              | 3.5        | 5.0       |          | EEUFR1A681( )        | 200           | 1000      |
| 820                  |                   | 10             | 12.5 | 1290   | 0.043                            | 6000              | 0.6              | 5.0        | 5.0       |          | EEUFR1A821( )        | 200           | 500       |
| 1000                 |                   | 10             | 16   | 1790   | 0.028                            | 8000              | 0.6              | 5.0        | 5.0       |          | EEUFR1A102( )        | 200           | 500       |
|                      |                   | 8              | 15   | 1240   | 0.041                            | 8000              | 0.6              | 3.5        | 5.0       |          | EEUFR1A102L( )       | 200           | 1000      |
| 1500                 |                   | 8              | 20   | 1560   | 0.030                            | 9000              | 0.6              | 3.5        | 5.0       |          | EEUFR1A152L( )       | 200           | 1000      |
|                      |                   | 10             | 16   | 1790   | 0.028                            | 8000              | 0.6              | 5.0        | 5.0       |          | EEUFR1A152( )        | 200           | 500       |
| 1800                 |                   | 10             | 20   | 2180   | 0.020                            | 10000             | 0.6              | 5.0        | 5.0       |          | EEUFR1A182( )        | 200           | 500       |
| 2200                 |                   | 10             | 25   | 2470   | 0.018                            | 10000             | 0.6              | 5.0        | 5.0       |          | EEUFR1A222L( )       | 200           | 500       |
| 3300                 |                   | 12.5           | 20   | 2600   | 0.018                            | 10000             | 0.6              | 5.0        | 5.0       |          | EEUFR1A332( )        | 200           | 500       |
| 3900                 |                   | 12.5           | 25   | 3190   | 0.015                            | 10000             | 0.6              | 5.0        | 5.0       |          | EEUFR1A392( )        | 200           | 500       |
| 4700                 |                   | 12.5           | 30   | 3630   | 0.013                            | 10000             | 0.8              | 5.0        |           |          | EEUFR1A472L          | 100           |           |
|                      |                   | 16             | 20   | 3300   | 0.017                            | 10000             | 0.8              | 7.5        | 7.5       |          | EEUFR1A472S( )       | 100           | 250       |
| 5600                 |                   | 12.5           | 35   | 3750   | 0.012                            | 10000             | 0.8              | 5.0        |           |          | EEUFR1A562L          | 100           |           |
| 6800                 |                   | 12.5           | 35   | 3750   | 0.012                            | 10000             | 0.8              | 5.0        |           |          | EEUFR1A682L          | 100           |           |
|                      |                   | 16             | 25   | 3820   | 0.014                            | 10000             | 0.8              | 7.5        | 7.5       |          | EEUFR1A682( )        | 100           | 250       |

· When requesting taped product, please put the letter "B" or "H" between the "( )". Lead wire pitch \*B=5 mm, 7.5 mm, H=2.5 mm.

· Please refer to the page of "Taping dimensions".

## Characteristics list

| Rated voltage (V.DC) | Cap. (±20 %) (μF) | Case size (mm) |      | Specification                                  |                                  |                   | Lead length (mm) |            |           | Part No.       | Min. Packaging Q'ty  |              |           |
|----------------------|-------------------|----------------|------|--|----------------------------------|-------------------|------------------|------------|-----------|----------------|----------------------|--------------|-----------|
|                      |                   | φD             | L    | Ripple current (100 kHz) (+105 °C) (mA r.m.s.) | Impedance (100 kHz) (+20 °C) (Ω) | Endurance (hours) | Lead dia. φd     | Lead space |           |                | Straight leads (pcs) | Taping (pcs) |           |
|                      |                   |                |      |  |                                  |                   |                  | Straight   | Taping *B |                |                      |              | Taping *H |
| 16                   | 68                | 5              | 11   | 280  | 0.300                            | 5000              | 0.5              | 2.0        | 5.0       | 2.5            | EEUFR1C680( )        | 200          | 2000      |
|                      | 100               | 5              | 11   | 280  | 0.300                            | 5000              | 0.5              | 2.0        | 5.0       | 2.5            | EEUFR1C101( )        | 200          | 2000      |
|                      | 120               | 6.3            | 11.2 | 455  | 0.130                            | 5000              | 0.5              | 2.5        | 5.0       | 2.5            | EEUFR1C121( )        | 200          | 2000      |
|                      | 220               | 6.3            | 11.2 | 455  | 0.130                            | 5000              | 0.5              | 2.5        | 5.0       | 2.5            | EEUFR1C221( )        | 200          | 2000      |
|                      | 470               | 8              | 11.5 | 950  | 0.056                            | 6000              | 0.6              | 3.5        | 5.0       |                | EEUFR1C471( )        | 200          | 1000      |
|                      | 680               | 8              | 15   | 1240   | 0.041                            | 8000              | 0.6              | 3.5        | 5.0       |                | EEUFR1C681L( )       | 200          | 1000      |
|                      |                   | 10             | 12.5 | 1290   | 0.043                            | 6000              | 0.6              | 5.0        | 5.0       |                | EEUFR1C681( )        | 200          | 500       |
|                      | 1000              | 8              | 20   | 1560   | 0.030                            | 9000              | 0.6              | 3.5        | 5.0       |                | EEUFR1C102L( )       | 200          | 1000      |
|                      |                   | 10             | 16   | 1790   | 0.028                            | 8000              | 0.6              | 5.0        | 5.0       |                | EEUFR1C102( )        | 200          | 500       |
|                      | 1500              | 10             | 20   | 2180   | 0.020                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1C152( )        | 200          | 500       |
|                      |                   | 10             | 25   | 2470   | 0.018                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1C152L( )       | 200          | 500       |
|                      | 1800              | 10             | 25   | 2470   | 0.018                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1C182L( )       | 200          | 500       |
|                      | 2200              | 12.5           | 20   | 2600   | 0.018                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1C222( )        | 200          | 500       |
|                      | 2700              | 12.5           | 25   | 3190   | 0.015                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1C272( )        | 200          | 500       |
|                      | 3300              | 12.5           | 30   | 3630   | 0.013                            | 10000             | 0.8              | 5.0        |           |                | EEUFR1C332L          | 100          |           |
|                      |                   | 16             | 20   | 3300   | 0.017                            | 10000             | 0.8              | 7.5        | 7.5       |                | EEUFR1C332S( )       | 100          | 250       |
|                      | 3900              | 12.5           | 35   | 3750   | 0.012                            | 10000             | 0.8              | 5.0        |           |                | EEUFR1C392L          | 100          |           |
|                      |                   | 16             | 20   | 3300   | 0.017                            | 10000             | 0.8              | 7.5        | 7.5       |                | EEUFR1C392S( )       | 100          | 250       |
|                      | 4700              | 12.5           | 35   | 3750   | 0.012                            | 10000             | 0.8              | 5.0        |           |                | EEUFR1C472L          | 100          |           |
|                      |                   | 16             | 25   | 3820   | 0.014                            | 10000             | 0.8              | 7.5        | 7.5       |                | EEUFR1C472( )        | 100          | 250       |
| 5600                 | 16                | 25             | 3820 | 0.014  | 10000                            | 0.8               | 7.5              | 7.5        |           | EEUFR1C562( )  | 100                  | 250          |           |
| 25                   | 47                | 5              | 11   | 280  | 0.300                            | 5000              | 0.5              | 2.0        | 5.0       | 2.5            | EEUFR1E470( )        | 200          | 2000      |
|                      | 68                | 5              | 11   | 280  | 0.300                            | 5000              | 0.5              | 2.0        | 5.0       | 2.5            | EEUFR1E680( )        | 200          | 2000      |
|                      | 100               | 6.3            | 11.2 | 455  | 0.130                            | 5000              | 0.5              | 2.5        | 5.0       | 2.5            | EEUFR1E101( )        | 200          | 2000      |
|                      | 150               | 6.3            | 11.2 | 455  | 0.130                            | 5000              | 0.5              | 2.5        | 5.0       | 2.5            | EEUFR1E151( )        | 200          | 2000      |
|                      | 220               | 8              | 11.5 | 950  | 0.056                            | 6000              | 0.6              | 3.5        | 5.0       |                | EEUFR1E221( )        | 200          | 1000      |
|                      | 330               | 8              | 11.5 | 950  | 0.056                            | 6000              | 0.6              | 3.5        | 5.0       |                | EEUFR1E331( )        | 200          | 1000      |
|                      | 390               | 8              | 15   | 1240   | 0.041                            | 8000              | 0.6              | 3.5        | 5.0       |                | EEUFR1E391L( )       | 200          | 1000      |
|                      | 470               | 8              | 15   | 1240   | 0.041                            | 8000              | 0.6              | 3.5        | 5.0       |                | EEUFR1E471Y( )       | 200          | 1000      |
|                      |                   | 8              | 20   | 1560   | 0.030                            | 9000              | 0.6              | 3.5        | 5.0       |                | EEUFR1E471L( )       | 200          | 1000      |
|                      |                   | 10             | 12.5 | 1290   | 0.043                            | 6000              | 0.6              | 5.0        | 5.0       |                | EEUFR1E471( )        | 200          | 500       |
|                      | 560               | 8              | 20   | 1560   | 0.030                            | 9000              | 0.6              | 3.5        | 5.0       |                | EEUFR1E561L( )       | 200          | 1000      |
|                      | 680               | 8              | 20   | 1560   | 0.030                            | 9000              | 0.6              | 3.5        | 5.0       |                | EEUFR1E681L( )       | 200          | 1000      |
|                      |                   | 10             | 16   | 1790   | 0.028                            | 8000              | 0.6              | 5.0        | 5.0       |                | EEUFR1E681( )        | 200          | 500       |
|                      | 820               | 10             | 20   | 2180   | 0.020                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1E821( )        | 200          | 500       |
|                      | 1000              | 10             | 20   | 2180   | 0.020                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1E102( )        | 200          | 500       |
|                      |                   | 10             | 25   | 2470   | 0.018                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1E102L( )       | 200          | 500       |
|                      | 1200              | 10             | 25   | 2470   | 0.018                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1E122L( )       | 200          | 500       |
|                      | 1500              | 12.5           | 20   | 2600   | 0.018                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1E152( )        | 200          | 500       |
|                      | 1800              | 12.5           | 25   | 3190   | 0.015                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1E182( )        | 200          | 500       |
|                      |                   | 16             | 20   | 3300   | 0.017                            | 10000             | 0.8              | 7.5        | 7.5       |                | EEUFR1E182S( )       | 100          | 250       |
| 2200                 | 12.5              | 30             | 3630 | 0.013  | 10000                            | 0.8               | 5.0              |            |           | EEUFR1E222L    | 100                  |              |           |
|                      | 16                | 20             | 3300 | 0.017  | 10000                            | 0.8               | 7.5              | 7.5        |           | EEUFR1E222S( ) | 100                  | 250          |           |
| 2700                 | 12.5              | 35             | 3750 | 0.012  | 10000                            | 0.8               | 5.0              |            |           | EEUFR1E272L    | 100                  |              |           |
|                      | 16                | 20             | 3300 | 0.017  | 10000                            | 0.8               | 7.5              | 7.5        |           | EEUFR1E272S( ) | 100                  | 250          |           |
| 3300                 | 16                | 25             | 3820 | 0.014  | 10000                            | 0.8               | 7.5              | 7.5        |           | EEUFR1E332( )  | 100                  | 250          |           |

· When requesting taped product, please put the letter "B" or "H" between the "( )". Lead wire pitch \*B=5 mm, 7.5 mm, H=2.5 mm.

· Please refer to the page of "Taping dimensions".

## Characteristics list

| Rated voltage (V.DC) | Cap. (±20 %) (μF) | Case size (mm) |      | Specification                                  |                                  |                   | Lead length (mm) |            |           | Part No.       | Min. Packaging Qty   |              |           |
|----------------------|-------------------|----------------|------|--|----------------------------------|-------------------|------------------|------------|-----------|----------------|----------------------|--------------|-----------|
|                      |                   | φD             | L    | Ripple current (100 kHz) (+105 °C) (mA r.m.s.) | Impedance (100 kHz) (+20 °C) (Ω) | Endurance (hours) | Lead dia. φd     | Lead space |           |                | Straight leads (pcs) | Taping (pcs) |           |
|                      |                   |                |      |  |                                  |                   |                  | Straight   | Taping *B |                |                      |              | Taping *H |
| 35                   | 33                | 5              | 11   | 280  | 0.300                            | 5000              | 0.5              | 2.0        | 5.0       | 2.5            | EEUFR1V330( )        | 200          | 2000      |
|                      | 68                | 6.3            | 11.2 | 455  | 0.130                            | 5000              | 0.5              | 2.5        | 5.0       | 2.5            | EEUFR1V680( )        | 200          | 2000      |
|                      | 100               | 8              | 11.5 | 950  | 0.056                            | 6000              | 0.6              | 3.5        | 5.0       |                | EEUFR1V101( )        | 200          | 1000      |
|                      | 180               | 8              | 11.5 | 950  | 0.056                            | 6000              | 0.6              | 3.5        | 5.0       |                | EEUFR1V181( )        | 200          | 1000      |
|                      | 220               | 8              | 11.5 | 950  | 0.056                            | 6000              | 0.6              | 3.5        | 5.0       |                | EEUFR1V221( )        | 200          | 1000      |
|                      | 270               | 8              | 15   | 1240   | 0.041                            | 8000              | 0.6              | 3.5        | 5.0       |                | EEUFR1V271L( )       | 200          | 1000      |
|                      |                   | 10             | 12.5 | 1290   | 0.043                            | 6000              | 0.6              | 5.0        | 5.0       |                | EEUFR1V271( )        | 200          | 500       |
|                      | 330               | 10             | 12.5 | 1330   | 0.043                            | 5000              | 0.6              | 5.0        | 5.0       |                | EEUFR1V331U( )       | 200          | 500       |
|                      | 390               | 8              | 20   | 1560   | 0.030                            | 9000              | 0.6              | 3.5        | 5.0       |                | EEUFR1V391L( )       | 200          | 1000      |
|                      | 470               | 8              | 20   | 1560   | 0.030                            | 9000              | 0.6              | 3.5        | 5.0       |                | EEUFR1V471L( )       | 200          | 1000      |
|                      |                   | 10             | 16   | 1790   | 0.028                            | 8000              | 0.6              | 5.0        | 5.0       |                | EEUFR1V471( )        | 200          | 500       |
|                      | 560               | 10             | 20   | 2180   | 0.020                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1V561( )        | 200          | 500       |
|                      | 680               | 10             | 20   | 2180   | 0.020                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1V681( )        | 200          | 500       |
|                      |                   | 10             | 25   | 2470   | 0.018                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1V681L( )       | 200          | 500       |
|                      | 820               | 10             | 25   | 2470   | 0.018                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1V821L( )       | 200          | 500       |
|                      | 1000              | 12.5           | 20   | 2600   | 0.018                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1V102( )        | 200          | 500       |
|                      | 1200              | 12.5           | 25   | 3190   | 0.015                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1V122( )        | 200          | 500       |
|                      | 1500              | 12.5           | 30   | 3630   | 0.013                            | 10000             | 0.8              | 5.0        |           |                | EEUFR1V152L          | 100          |           |
|                      |                   | 16             | 20   | 3300   | 0.017                            | 10000             | 0.8              | 7.5        | 7.5       |                | EEUFR1V152S( )       | 100          | 250       |
|                      | 1800              | 12.5           | 35   | 3750   | 0.012                            | 10000             | 0.8              | 5.0        |           |                | EEUFR1V182L          | 100          |           |
|                      | 16                | 25             | 3820 | 0.014  | 10000                            | 0.8               | 7.5              | 7.5        |           | EEUFR1V182( )  | 100                  | 250          |           |
| 2200                 | 12.5              | 35             | 3750 | 0.012  | 10000                            | 0.8               | 5.0              |            |           | EEUFR1V222L    | 100                  |              |           |
|                      | 16                | 25             | 3820 | 0.014  | 10000                            | 0.8               | 7.5              | 7.5        |           | EEUFR1V222( )  | 100                  | 250          |           |
| 50                   | 4.7               | 5              | 11   | 185  | 0.620                            | 5000              | 0.5              | 2.0        | 5.0       | 2.5            | EEUFR1H4R7( )        | 200          | 2000      |
|                      | 10                | 5              | 11   | 250  | 0.340                            | 5000              | 0.5              | 2.0        | 5.0       | 2.5            | EEUFR1H100( )        | 200          | 2000      |
|                      | 22                | 5              | 11   | 250  | 0.340                            | 5000              | 0.5              | 2.0        | 5.0       | 2.5            | EEUFR1H220( )        | 200          | 2000      |
|                      | 47                | 6.3            | 11.2 | 405  | 0.140                            | 5000              | 0.5              | 2.5        | 5.0       |                | EEUFR1H470( )        | 200          | 2000      |
|                      | 56                | 6.3            | 11.2 | 405  | 0.140                            | 5000              | 0.5              | 2.5        | 5.0       | 2.5            | EEUFR1H560( )        | 200          | 2000      |
|                      | 100               | 8              | 11.5 | 870  | 0.061                            | 6000              | 0.6              | 3.5        | 5.0       |                | EEUFR1H101( )        | 200          | 1000      |
|                      | 120               | 8              | 15   | 1140   | 0.045                            | 8000              | 0.6              | 3.5        | 5.0       |                | EEUFR1H121L( )       | 200          | 1000      |
|                      | 150               | 10             | 12.5 | 1170   | 0.042                            | 6000              | 0.6              | 5.0        | 5.0       |                | EEUFR1H151( )        | 200          | 500       |
|                      | 180               | 8              | 20   | 1430   | 0.033                            | 9000              | 0.6              | 3.5        | 5.0       |                | EEUFR1H181L( )       | 200          | 1000      |
|                      | 220               | 10             | 16   | 1650   | 0.030                            | 8000              | 0.6              | 5.0        | 5.0       |                | EEUFR1H221( )        | 200          | 500       |
|                      | 270               | 10             | 20   | 1890   | 0.023                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1H271( )        | 200          | 500       |
|                      | 330               | 10             | 25   | 2150   | 0.022                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1H331L( )       | 200          | 500       |
|                      | 470               | 12.5           | 20   | 2260   | 0.022                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1H471( )        | 200          | 500       |
|                      | 560               | 12.5           | 25   | 2660   | 0.018                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1H561( )        | 200          | 500       |
|                      | 680               | 12.5           | 30   | 3160   | 0.016                            | 10000             | 0.8              | 5.0        |           |                | EEUFR1H681L          | 100          |           |
|                      | 820               | 12.5           | 35   | 3270   | 0.014                            | 10000             | 0.8              | 5.0        |           |                | EEUFR1H821L          | 100          |           |
| 1000                 | 16                | 20             | 2870 | 0.019  | 10000                            | 0.8               | 7.5              | 7.5        |           | EEUFR1H821S( ) | 100                  | 250          |           |
|                      | 16                | 25             | 3320 | 0.016  | 10000                            | 0.8               | 7.5              | 7.5        |           | EEUFR1H102( )  | 100                  | 250          |           |
| 63                   | 18                | 5              | 11   | 175  | 0.510                            | 5000              | 0.5              | 2.0        | 5.0       | 2.5            | EEUFR1J180( )        | 200          | 2000      |
|                      | 47                | 6.3            | 11.2 | 284  | 0.210                            | 5000              | 0.5              | 2.5        | 5.0       | 2.5            | EEUFR1J470( )        | 200          | 2000      |
|                      | 82                | 8              | 11.5 | 566  | 0.092                            | 6000              | 0.6              | 3.5        | 5.0       |                | EEUFR1J820( )        | 200          | 1000      |
|                      | 100               | 8              | 15   | 741  | 0.068                            | 8000              | 0.6              | 3.5        | 5.0       |                | EEUFR1J101L( )       | 200          | 1000      |
|                      |                   | 10             | 12.5 | 761  | 0.063                            | 6000              | 0.6              | 5.0        | 5.0       |                | EEUFR1J101( )        | 200          | 500       |
|                      | 120               | 8              | 20   | 930  | 0.050                            | 9000              | 0.6              | 3.5        | 5.0       |                | EEUFR1J121L( )       | 200          | 1000      |
|                      |                   | 10             | 16   | 1073   | 0.045                            | 8000              | 0.6              | 5.0        | 5.0       |                | EEUFR1J121( )        | 200          | 500       |
|                      | 150               | 8              | 20   | 930  | 0.050                            | 9000              | 0.6              | 3.5        | 5.0       |                | EEUFR1J151L( )       | 200          | 1000      |
|                      |                   | 10             | 16   | 1073   | 0.045                            | 8000              | 0.6              | 5.0        | 5.0       |                | EEUFR1J151( )        | 200          | 500       |
|                      | 180               | 10             | 20   | 1229   | 0.035                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1J181( )        | 200          | 500       |
|                      | 220               | 10             | 25   | 1500   | 0.033                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1J221L( )       | 200          | 500       |
|                      |                   | 10             | 20   | 1229   | 0.035                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1J271U( )       | 200          | 500       |
|                      | 270               | 10             | 25   | 1500   | 0.033                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1J271L( )       | 200          | 500       |
|                      |                   | 12.5           | 20   | 1582   | 0.033                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1J271( )        | 200          | 500       |
|                      | 330               | 12.5           | 20   | 1582   | 0.033                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1J331( )        | 200          | 500       |
|                      | 390               | 12.5           | 25   | 1995   | 0.027                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR1J391( )        | 200          | 500       |
| 470                  | 12.5              | 25             | 1995 | 0.027  | 10000                            | 0.6               | 5.0              | 5.0        |           | EEUFR1J471( )  | 200                  | 500          |           |
| 560                  | 12.5              | 30             | 2528 | 0.024  | 10000                            | 0.8               | 5.0              |            |           | EEUFR1J561L    | 100                  |              |           |
|                      | 16                | 20             | 2153 | 0.029  | 10000                            | 0.8               | 7.5              | 7.5        |           | EEUFR1J561S( ) | 100                  | 250          |           |
| 680                  | 12.5              | 35             | 2780 | 0.021  | 10000                            | 0.8               | 5.0              |            |           | EEUFR1J681L    | 100                  |              |           |
| 820                  | 16                | 25             | 2988 | 0.024  | 10000                            | 0.8               | 7.5              | 7.5        |           | EEUFR1J821( )  | 100                  | 250          |           |
| 100                  | 100               | 10             | 20   | 1500   | 0.084                            | 10000             | 0.6              | 5.0        | 5.0       |                | EEUFR2A101( )        | 200          | 500       |

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· Please refer to the page of "Taping dimensions".

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